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Title: Amendment #5 to AEC Byproduct Material License 4-487-3

Serial No: 362-4710

Pages: 5

Notes: NRDL

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DEPARTMENT OF THE NAVY

BUREAU OF SHIPS
WASHINGTON 25, D. C.

IN REPLY REFER TO

10330/2
Ser 362-478

15 AUG 1961

From: Chief, Bureau of Ships
To: Commanding Officer and Director
U. S. Naval Radiological Defense Laboratory

Subj: Amendment No. 5 to AEC Byproduct Material License 4-487-3;
forwarding of

Ref: (a) NRDL ltr 730-53, WJF: jp of 16 May 1961 to AEC;
(b) NRDL ltr 730-16, ALB: jp of 28 Feb 1961 to AEC via BUSHIPS

Encl: (1) Original and one copy of subject amendment
(2) One set of Form AEC-313 w/instructions
(3) CFR Title 10, Parts 20 and 30

1. Enclosure (1) is the amendment to the subject license, granted as a result of references (a) and (b), which renews the subject license until 31 August 1966.
2. Enclosures (2) and (3) are forwarded for information and retention.

V. J. [Signature]

Copy to:
AEC (Isotopes Branch)
BUMED (Code 74)

U. S. ATOMIC ENERGY COMMISSION

Page 1 of 3 Pages

BYPRODUCT MATERIAL LICENSE NO. 4-487-3 AMENDMENT NO. 3

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(866)

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 26, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954 and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. Name Department of the Navy U.S. Naval Radiological Defense Laboratory</p> <p>2. Address Laboratory Scientific and Medical Departments San Francisco, California</p>		<p>In accordance with application dated 2/24/61 as amended by letter dated May 16, 1961</p> <p>3. License number 4-487-3 is amended in its entirety to read as follows:</p> <p>4. Expiration date August 31, 1966</p> <p>5. Reference No.</p>	
<p>6. Byproduct material (element and mass number)</p> <p>(See page 2)</p>	<p>7. Chemical and/or physical form</p> <p>(See page 2)</p>	<p>8. Maximum amount of radioactivity which licensee may possess at any one time</p> <p>(See page 2)</p>	

9. Authorized use

(See page 2)

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. Byproduct materials may also be used at Navy, Army, and Air Force facilities provided such use is under the direct supervision and control of U.S. Naval Radiological Defense Laboratory personnel and in accordance with procedures established by the Radioisotope Committee of the U.S. Naval Radiological Defense Laboratory.
12. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation".
13. Byproduct materials shall be used by, or under the supervision of, individuals designated by the Radioisotope Committee, A. L. Baietti, Chairman.
14. A. Each sealed source acquired from another person and containing byproduct material with a half-life greater than 30 days and in any form other than gas, shall be tested for contamination and/or leakage prior to use. In the absence of a certificate from a transferor indicating that a test has been made within 6 months prior to the transfer, the sealed source shall not be put into use until tested.

(See page 2)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

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License Number 4-487-3
(E66)

Amendment No. 5

CONTINUED:

- | | | |
|---|-------------------------------------|---|
| 6. Byproduct material
(element and mass number) | 7. Chemical and/or physical
form | 8. Maximum amount of radio-
activity which licensee may
possess at any one time |
| A. Any byproduct material
with Atomic Nos. 1 -
84, inclusive. | A. Any | A. 5 curies of each except:
Barium 140 - 2000 curies
Bromine 82 - 50 curies
Cesium 137 - 1000 curies
Cobalt 60 - 15,000 curies
Hydrogen 3 - 200 curies
Iridium 192 - 500 curies
Lanthanum 140 - 2000 curies
Lutecium 177 - 2000 curies
Mercury 203 - 10 curies
Strontium 90 - 100 curies
Xenon 133 - 2000 curies
Mixed Fission Products -
100 curies |

9. Authorized use

- A. RESEARCH AND DEVELOPMENT as defined in Section 30.4(k) of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Licensing of Byproduct Material".

CONDITIONS

- B. Each sealed source fabricated by the licensee shall be tested for contamination and/or leakage immediately after fabrication. If the test reveals the presence of 0.005 microcuries or more of removable contamination, the licensee shall repair and/or decontaminate and retest the source. Sealed sources fabricated for distribution and containing byproduct material (with the exception of solid metallic Iridium 192, byproduct material with a half-life not exceeding thirty days, and byproduct material in the form of gas) shall, in addition to an initial test upon fabrication, be stored for a period of seven days and retested prior to being distributed.
- C. Each sealed source containing byproduct material with a half-life greater than 30 days and in any form other than gas, shall be tested for leakage and/or contamination at intervals not to exceed 6 months, except that sources designed as an alpha emitting source shall be tested at intervals not exceeding 3 months.

(See page 3)

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BYPRODUCT MATERIAL LICENSEPage 3 of 3 Pages

Supplementary Sheet

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License Number 4-487-3
(H66)

Amendment No. 5

CONTINUED:

CONDITIONS

- D. The test shall be capable of detecting the presence of 0.005 microcuries of removable contamination on the test sample. The test sample shall be taken from the sealed source or from appropriate accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- E. If the test required in A or C above reveals the presence of 0.005 microcuries or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five days of the test with the Director, Division of Licensing and Regulation, U.S. Atomic Energy Commission, Washington 25, D.C., describing the equipment involved, the test results and the corrective action taken. A copy of such report shall be sent to the manager of the nearest AEC operations office listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.
15. Each sealed source of licensed material to be used outside of a shielded exposure device shall bear a durable, legible and visible tag permanently attached to the source. The tag shall be at least one (1) inch square, shall bear the conventional radiation symbol prescribed in Section 20.203(a) of Part 20 and a minimum of the following instructions: DANGER, RADIOACTIVE MATERIAL, DO NOT HANDLE, NOTIFY MILITARY AUTHORITIES IF FOUND.
16. Byproduct material shall not be used in or on human beings.
17. Pursuant to Section 20.302, 10 CFR 20, byproduct materials with physical half-lives of 90 days or less may be disposed of by storage and decay in roped off and posted restricted areas.
18. Pursuant to Section 20.103(c), 10 CFR 20, individuals in restricted areas may be exposed to airborne concentrations of byproduct material in excess of the limits specified in Appendix B, Table I, provided that the protective equipment described in Appendix A and Appendix B to application dated February 24, 1961 is utilized.
19. Except as otherwise specifically provided for in the license, the licensee shall possess and use byproduct material described in Items 6, 7 and 8 of this license in accordance with statements, representations, and procedures contained in his application dated February 24, 1961 as amended by letter dated May 16, 1961.

Date August 8, 1961

For the U. S. Atomic Energy Commission

by Chief, Isotopes BranchDivision of Licensing and Regulation
Washington 25, D. C.

Enclosure

(1) To Ser 362-478